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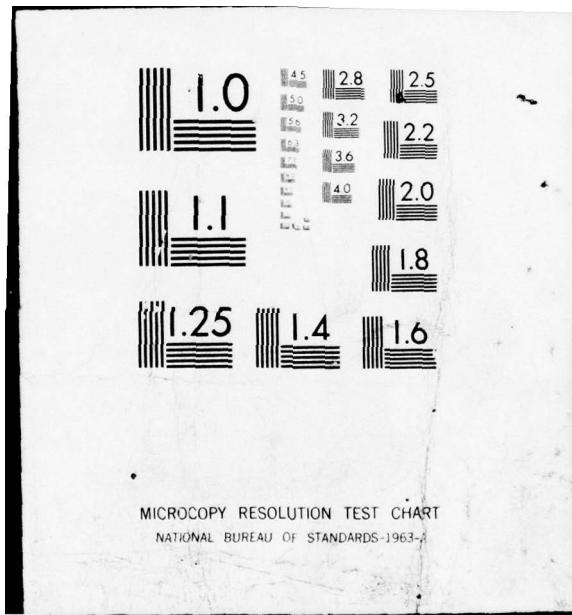
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9 OCCUPATIONAL SURVEY REPORT  
ELECTRONIC PRINCIPLES

AD A 044125



ANALOG FLIGHT SIMULATOR SPECIALIST

AFSC 34153

AFPT-90-341-222

22 AUGUST 1977

OCCUPATIONAL SURVEY BRANCH  
USAF OCCUPATIONAL MEASUREMENT CENTER  
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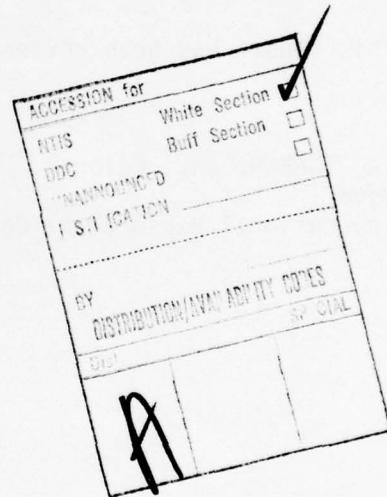
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## PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Analog Flight Simulator Specialist, AFSC 34153.

The Electronic Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Mr. James B. Keeth. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

Computer programs for analyzing the data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Distribution of this report is made upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

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ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT  
ANALOG FLIGHT SIMULATOR SPECIALIST  
AFSC 34153

INTRODUCTION

~~This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Analog Flight Simulator Specialists (AFSC 34153). The data for this report were collected during the period April through June 1977.~~

This report describes: (1) development and administration of the survey instrument; and (2) electronic principles used by DAFSC 5-skill level personnel both CONUS and overseas and assigned to selected major commands.

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

The EPI was developed by personnel from the Occupational Survey Branch who were well qualified in theoretical physics and electronics, as well as in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Representing the five ATC training centers, electronics experts who averaged 12 years of maintenance experience and four years of electronic principles instruction experience spent several weeks refining the EPI. In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted during the development of the inventory.

The final version of the EPI used in this survey contained 1,257 items in 62 subject matter areas covering all electronic principles training given at the five ATC technical training centers. Table 1 lists the 62 subject areas.

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 34153 airmen worldwide. Responses from 202 individuals represented 60 percent of the total of all AFSC 34153 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

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TABLE 1  
EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER</u>	<u>GPSUM PAGE NUMBER</u>
1	MATHEMATICS	A1	2
2	DIRECT CURRENT AND VOLTAGE	A15	2
3	RESISTANCE	A24	2
4	MULTIMETER USES	B52	3
5	ALTERNATING CURRENT	B61	4
6	INDUCTORS AND INDUCTIVE REACTANCE	B67	4
7	CAPACITORS AND CAPACITIVE REACTANCE	C92	5
8	TRANSFORMERS	C128	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	D229	10
12	FILTERS	D239	10
13	COUPLING	E261	11
14	SOLDERING	E273	11
15	RELAYS	E295	12
16	MICROPHONES	F314	12
17	SPEAKERS	F327	13
18	OSCILLOSCOPES	F342	13
19	SEMICONDUCTOR DIODES	G354	13
20	TRANSISTORS	G404	15
21	TRANSISTOR AMPLIFIERS	G428	16
22	SOLID-STATE SPECIAL PURPOSE DEVICES	H477	19
23	POWER SUPPLIES	H483	19
24	OSCILLATORS	H512	19
25	MULTIVIBRATORS	I539	20
26	LIMITERS AND CLAMPERS	I555	21
27	ELECTRON TUBES	I565	21
28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS	J609	22
29	SPECIAL PURPOSE ELECTRON TUBES	J616	23
30	HETERODYNING, MODULATION, AND DEMODULATION	J632	23
31	AM SYSTEMS	K638	23
32	FM SYSTEMS	K666	24

TABLE 1 (CONTINUED)

## EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER</u>	<u>GPSUM PAGE NUMBER</u>
33	NUMBERING SYSTEMS	K685	25
34	LOGIC FUNCTIONS	L695	25
35	BOOLEAN EQUATIONS	L708	26
36	COUNTERS	L733	27
37	TIMING CIRCUITS	M757	27
38	USE OF SIGNAL GENERATORS	M769	28
39	MOTORS AND GENERATORS	M779	28
40	METER MOVEMENTS	N808	29
41	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS	N818	29
42	WAVESHAPING CIRCUITS	N834	30
43	SINGLE SIDEBAND SYSTEMS	0845	30
44	PULSE MODULATION SYSTEMS	0875	31
45	ANTENNAS	0914	32
46	TRANSMISSION LINES	P953	34
47	WAVEGUIDES AND CAVITY RESONATORS	P984	35
48	MICROWAVE AMPLIFIERS AND OSCILLATORS	P1034	37
49	REGISTERS	Q1110	39
50	STORAGE DEVICES	Q1117	40
51	DIGITAL TO ANALOG CONVERTERS	Q1126	40
52	PHANTASTRONS	Q1140	41
53	SCHMITT TRIGGERS	R1141	41
54	CABLE FABRICATION	R1144	41
55	INPUT/OUTPUT DEVICES	S1146	41
56	PHOTO SENSITIVE DEVICES	S1149	41
57	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	S1150	41
58	INFRARED	T1159	41
59	LASERS	T1186	42
60	DISPLAY TUBES	T1220	43
61	PROGRAMMING	U1234	43
62	DB AND POWER RATIOS	U1255	44

TABLE 2  
COMMAND REPRESENTATION OF SURVEY SAMPLE

COMMAND	PERCENT ASSIGNED	34153 PERCENT OF SAMPLE
SAC	58	59
MAC	14	12
TAC	8	11
ADC	8	8
USAFE	5	2
ATC	3	1
OTHERS	4	7
TOTAL	100	100

Total Assigned - 335  
Total Sampled - 202  
Percent Sampled - 60%

#### PRESENTATON OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the eight selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on page 6 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Resistance (pp. 2-3), Soldering (pp. 11-12), and Motors (pp. 28-29) to low in areas such as AM and FM Systems (pp. 23-25), SSB Systems (pp. 30-31), Antennas (pp. 32-34), Transmission Lines (pp. 34-35), Waveguides or Cavity Resonators (pp. 35-37), and Klystrons, Traveling Wave Tubes (TWT), Parametric Amplifiers, or Magnetrons (pp. 37-39). Additional AFSC 34153 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

PCT MGRS RESPONDING \*YES\* BY SELECTED GRPS

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS  
IN THE 341X3 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GPSUM3 PAGE 1

GROUP IDENTITY	SPC051	ALL AIRMEN DAFSC 34153	STATIONED IN CONUS	CONTAINING 202 MEMBERS.
GROUP IDENTITY	SPC052	ALL AIRMEN DAFSC 34153	STATIONED OVERSEAS	CONTAINING 185 MEMBERS.
GROUP IDENTITY	SPC053	ALL AIRMEN DAFSC 34153	ASSIGNED TO ADC	CONTAINING 18 MEMBERS.
GROUP IDENTITY	SPC054	ALL AIRMEN DAFSC 34153	ASSIGNED TO MAC	CONTAINING 17 MEMBERS.
GROUP IDENTITY	SPC055	ALL AMN DAFSC 34153	ASSIGNED TO MAC	CONTAINING 25 MEMBERS.
GROUP IDENTITY	SPC056	ALL AMN DAFSC 34153	ASSIGNED TO SAC	CONTAINING 119 MEMBERS.
GROUP IDENTITY	SPC057	ALL AMN DAFSC 34153	ASSIGNED TO TAC	CONTAINING 23 MEMBERS.
GROUP IDENTITY	SPC058	ALL AMN DAFSC 34153	ASSIGNED TO USAFE	CONTAINING 5 MEMBERS.

PCT MRS RESPONDING • YES • BY SELECTED GROUPS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

GPSUM3 PAGE 2

UY-TSK

		SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	SPC 058
A	1 A1-01 IN YOUR PRESENT JOB, DO YOU USE INSTRUMENTS, SUCH AS METERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.	93	92	94	100	72	95	96	100
A	2 A1-02 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.	51	50	61	65	32	46	76	80
A	3 A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	62	59	83	65	60	56	70	60
A	4 A1-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY.	31	30	33	35	24	24	57	20
A	5 A1-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES.	63	61	78	65	56	56	78	80
A	6 A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.	9	9	11	12	8	8	9	20
A	7 A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	8	8	11	12	8	7	9	20
A	8 A1-08 DO YOU SOLVE QUADRATIC EQUATIONS.	21	21	11	18	20	18	35	20
A	9 A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS.	4	4	6	0	4	3	9	0
A	10 A1-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.	43	43	33	41	40	42	43	40
A	11 A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	67	65	78	65	72	59	87	60
A	12 A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES.	11	10	17	6	12	9	13	20
A	13 A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.	21	21	22	35	20	15	35	20
A	14 A1-14 DO YOU SOLVE OR USE PROPORTIONS.	61	60	78	59	56	56	74	80
A	15 A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT (VI).	100	99	100	94	100	100	100	100
A	16 A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	61	62	56	76	40	63	61	60
A	17 A2-03 DO YOU USE THE TERM OHM.	99	98	100	94	100	98	100	100
A	18 A2-04 DO YOU USE THE TERM ION.	16	16	11	24	16	12	13	6
A	19 A2-05 DO YOU USE THE TERM DYNE.	16	17	6	18	8	14	9	0
A	20 A2-06 DO YOU USE THE TERM AMPERE.	97	96	100	94	96	96	100	100
A	21 A2-07 DO YOU USE THE TERM NEUTRON.	13	14	4	24	4	12	17	0
A	22 A2-08 DO YOU USE THE TERM COULOMB.	27	26	33	29	12	22	20	20
A	23 A2-09 DO YOU USE THE TERM PROTON.	13	19	6	18	8	12	17	0
A	24 A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	94	95	89	100	96	93	100	80
A	25 A3-02 DO YOU INSPECT RESISTORS.	100	100	100	100	100	100	100	100
A	26 A3-03 DO YOU CLEAN RESISTORS.	93	93	94	82	84	95	96	100
A	27 A3-04 DO YOU ADJUST RESISTORS.	98	98	94	100	96	97	100	80
A	28 A3-05 DO YOU CHECK OHMIC VALUE OR RESISTORS.	100	100	100	100	100	100	100	100
A	29 A3-06 DO YOU REMOVE OR REPLACE RESISTORS.	100	100	100	100	100	100	100	100
A	30 A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM.	32	33	22	35	28	30	43	20
A	31 A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIXED RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS.	99	98	100	100	96	98	100	100
A	32 A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT, OR POTENTIOMETER.	98	97	100	88	100	99	91	100
A	33 A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE.	98	98	100	100	92	100	91	100

#### TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

PCT MBR'S RESPONDING 'YES' BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

GPSUM3 PAGE 4

QY-TSK	SPC						SPC					
	051	052	054	055	056	057	058	051	052	054	055	056
B 61 82-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE (RMS).	84	85	76	94	64	90	74	84	85	76	94	74
B 62 82-02 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE.	86	87	83	94	64	92	74	100	100	75	94	74
B 63 82-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC).	74	75	78	94	36	79	74	100	100	56	94	57
B 64 82-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH.	56	57	44	94	40	58	57	60	60	45	94	57
B 65 82-05 DO YOU USE OR REFER TO THE TERM FREQUENCY.	91	91	63	88	80	94	87	100	100	91	88	87
B 66 82-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.	33	35	26	35	20	33	39	40	40	35	26	39
B 67 83-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING	70	70	61	47	68	74	80	80	80	74	74	80
B 68 63-02 DO YOU INSPECT INDUCTORS.	68	68	61	41	60	74	70	100	100	50	43	80
B 69 83-03 DO YOU CLEAN INDUCTORS.	45	45	39	35	28	50	57	60	60	39	39	57
B 70 83-04 DO YOU ADJUST INDUCTORS.	37	36	39	20	20	72	70	100	100	68	67	72
B 71 83-05 DO YOU REMOVE OR REPLACE INDUCTORS.	69	68	67	47	68	72	70	100	100	57	57	60
B 72 83-06 DO YOU USE OR REFER TO INDUCTANCE.	58	57	61	47	49	63	52	100	100	42	42	43
B 73 83-07 DO YOU USE OR REFER TO HENRIES.	43	42	44	47	40	42	43	60	60	49	48	52
B 74 83-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	49	48	44	47	48	48	48	60	60	14	14	14
B 75 83-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	13	14	6	12	14	14	14	20	20	13	13	20
B 76 83-10 DO YOU USE OR REFER TO HISTERESIS LOSS IN INDUCTORS.	18	18	22	24	20	13	13	35	35	18	18	22
B 77 83-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS	17	17	17	12	16	13	13	35	35	17	17	17
B 78 83-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL.	16	17	18	8	17	17	17	20	20	17	17	20
B 79 83-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE.	14	15	6	18	4	16	13	0	0	14	15	0
B 80 83-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.	15	16	11	24	4	16	13	0	0	15	16	0
B 81 83-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE PERMEABILITY OF THE CORE MATERIAL.	15	16	11	18	8	15	17	0	0	15	16	0
B 82 83-16 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS.	17	16	13	18	4	17	22	40	40	23	23	40
B 83 83-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.	25	25	23	18	16	25	39	40	40	25	25	39
B 84 83-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	25	24	23	18	16	24	24	43	43	25	25	40
B 85 83-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES PARALLEL CIRCUITS.	27	27	22	29	20	27	27	40	40	25	25	40
B 86 83-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	40	39	29	24	24	44	44	60	60	25	29	60
B 87 83-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	27	27	22	29	20	27	27	40	40	25	29	40
B 88 83-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.	26	25	33	29	16	27	30	60	60	25	29	60
B 89 83-23 DO YOU WORK WITH POWER INDUCTORS.	49	51	28	41	52	50	57	60	60	28	48	44
B 90 83-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	42	43	28	35	44	44	44	40	40	21	35	22
B 91 83-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	21	21	11	35	28	16	22	20	20	21	35	22

PCT MRS RESPONDING 'YES' BY SELECTED GROUPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

GPSUM3 PAGE 5

	UT-13K	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057
C 92 CI-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.	95	94	94	88	97	91	80	CAPACITORS AND CAPACITIVE REACTANCE
C 93 CI-02 DO YOU INSPECT CAPACITORS.	99	99	94	100	99	100	100	CAPACITORS AND CAPACITIVE REACTANCE
C 94 CI-03 DO YOU CLEAN CAPACITORS.	59	59	53	36	65	57	60	C 95 CI-04 DC YOU ADJUST CAPACITORS.
C 96 CI-05 DO YOU TEST CAPACITORS.	40	41	33	65	44	51	60	C 97 CI-06 DO YOU DISCHARGE CAPACITORS.
C 98 CI-07 DO YOU REMOVE OR REPLACE CAPACITORS.	89	90	63	88	84	89	100	C 99 CI-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.
C 100 CI-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	100	99	100	100	99	100	100	C 101 CI-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.
C 102 CI-11 DO YOU USE OR REFER TO CAPACITANCE.	93	92	100	94	84	93	91	C 103 CI-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT.
C 104 CI-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	23	24	22	47	32	18	20	C 105 CI-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE
C 106 CI-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	47	47	44	53	44	47	43	C 107 CI-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS
C 108 CI-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS	94	94	100	96	93	87	100	C 109 CI-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC
C 110 CI-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS	95	95	89	78	62	64	91	C 111 CI-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS
C 112 CI-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT	17	16	17	47	0	16	17	C 113 CI-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS
C 114 CI-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	20	21	17	41	16	19	13	C 115 CI-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL
C 116 CI-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	42	41	50	59	24	40	43	C 117 CI-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO
C 118 CI-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS	48	48	44	59	24	50	43	C 119 CI-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY
C 120 CI-29 DO YOU CALCULATE CAPACITIVE REACTANCE	32	32	33	53	24	30	40	

PCT MEMBERS RESPONDING 'YES' BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

GPSUM3 PAGE 6

D Y-TASK	SPC											
	051	052	053	054	055	056	057	058	059	060	061	062
C 121 C1=30 DO YOU WORK WITH ROTOR-STATOR (VARIABLE) CAPACITORS	30	29	33	35	24	23	65	80				
C 122 C1=31 DO YOU WORK WITH COMPRESSOR (TRIMMER) CAPACITORS	31	30	33	41	32	24	61	80				
C 123 C1=32 DO YOU WORK WITH ELECTROLYtic (FIXED) CAPACITORS	95	95	94	94	96	94	100	100				
C 124 C1=33 DO YOU WORK WITH PAPER (FIXED) CAPACITORS	86	86	89	88	72	87	83	100				
C 125 C1=34 DO YOU WORK WITH MICA (FIXED) CAPACITORS	96	94	94	94	92	83	83	100				
C 126 C1=35 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS	85	85	89	71	92	85	83	100				
C 127 C1=36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS	21	22	22	12	16	23	20	20				
C 128 C2=01 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB	86	90	72	88	68	94	87	60				
C 129 C2=02 DO YOU INSPECT TRANSFORMERS	91	92	78	94	84	94	83	80				
C 130 C2=03 DO YOU CLEAN TRANSFORMERS	63	62	72	71	32	70	43	80				
C 131 C2=04 DO YOU ADJUST TRANSFORMERS	41	42	33	59	32	42	39	60				
C 132 C2=05 DO YOU TROUBLESHOOT TRANSFORMERS	83	84	67	76	64	91	74	60				
C 133 C2=06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS	93	94	89	88	76	87	80					
C 134 C2=07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING	6	6	11	12	0	6	4	0				
C 135 C2=08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M)	0	9	0	0	4	12	0	0				
C 136 C2=09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M	11	12	0	0	4	14	13	0				
C 137 C2=10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS	21	22	22	29	8	24	9	20				
C 138 C2=11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS	30	29	28	29	12	32	30	20				
C 139 C2=12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS	13	14	6	0	4	17	17	0				
C 140 C2=13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS	10	11	0	0	4	14	9	0				
C 141 C2=14 DO YOU WORK WITH AUTO TRANSFORMERS	50	51	53	53	44	50	70	20				
C 142 C2=15 DO YOU WORK WITH POWER TRANSFORMERS	86	86	88	72	86	83	80					
C 143 C2=16 DO YOU WORK WITH AUDIO TRANSFORMERS	64	64	61	47	72	61	76	60				
C 144 C2=17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS	25	26	22	41	16	25	22	40				
C 145 C2=18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS	24	25	17	35	20	28	17	0				
C 146 C2=19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE	88	88	83	76	68	92	87	80				
C 147 C2=20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE	83	83	76	68	85	87	80					
C 148 C2=21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES	70	70	67	53	40	78	70	60				
C 149 C2=22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	43	43	44	65	24	41	48	40				
C 150 C2=23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	57	57	67	53	36	60	57	60				
C 151 C2=24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS	93	93	89	88	80	96	91	80				

	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	SPC 058
C 152 C2=25 DO YOU REFER TO MULTIPLE SECONDARY-MINDINGS SCHEMATIC	79	79	b3	71	68	62	b3	80
C 153 C2=26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR	85	85	89	82	76	87	b3	80
TRANSFORMERS								
C 154 C2=27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR	89	89	69	88	76	91	87	80
TRANSFORMERS								
C 155 C2=28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR	52	52	50	59	36	54	57	40
TRANSFORMERS								
C 156 C2=29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR	61	62	56	71	44	63	65	40
TRANSFORMERS								
C 157 C2=30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC	73	74	67	88	48	75	78	60
SYMBOLS FOR TRANSFORMERS								
C 158 C2=31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN	63	64	56	59	36	73	57	60
SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING								
SCHEMATIC SYMBOLS								
C 159 C2=32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN	29	29	33	35	16	28	39	20
TRANSFORMERS YOU WORK WITH								
C 160 C2=33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE	37	35	61	41	16	36	35	60
TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO								
C 161 C2=34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS	65	65	72	53	60	69	52	80
FOR TRANSFORMERS								
C 162 C2=35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS	34	34	44	35	16	36	26	40
USING TURNS RATIOS								
C 163 C2=36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS	23	23	33	29	8	24	17	40
USING TURNS RATIOS								
C 164 C2=37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE	52	52	39	24	28	62	48	60
PHASE TRANSFORMERS								
C 165 C2=38 DO YOU INSPECT THREE PHASE TRANSFORMERS	41	41	33	18	12	52	39	60
C 166 C2=39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS	27	26	22	0	20	32	30	40
C 167 C2=40 DO YOU ADJUST THREE PHASE TRANSFORMERS	16	17	11	0	16	35	40	
C 168 C2=41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	38	38	22	12	24	39	40	
C 169 C2=42 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	40	39	28	6	28	47	43	40
C 170 C2=43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER	7	6	11	0	0	8	9	20
PARTS SUCH AS MINDINGS								
C 171 C3=01 DO YOU USE OR REFER TO PERMANENT MAGNETS	44	43	39	35	48	43	48	40
C 172 C3=02 DO YOU USE OR REFER TO TEMPORARY MAGNETS	44	44	41	32	45	57	40	
C 173 C3=03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC	16	18	17	29	20	14	17	0
MATERIALS								
C 174 C3=04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC	20	21	22	29	16	18	17	20
MATERIALS								
C 175 C3=05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC	20	20	22	29	16	18	17	20
MATERIALS								
C 176 C3=06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM	25	24	28	29	20	20	34	20
C 177 C3=07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR	35	36	41	28	34	39	20	
FLUX								
C 178 C3=08 DO YOU USE OR REFER TO HERRING'S THEORY OF MAGNETISM	6	9	11	6	0	9	9	0

PCT MBR'S RESPONDING 'YES' BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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DYN-TSK	CSE 1		CSE 2		CSE 3		CSE 4		CSE 5		CSE 6	
	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
C 179 C3-09 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM	9	10	6	12	4	9	9	9	0			
C 180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION	34	35	22	35	28	34	39	20				
C 181 C3-11 DC YOU USE OR REFER TO FLUX DENSITY	21	22	17	29	16	20	22	20				
C 182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT	48	49	33	41	32	51	52	60				
C 183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES	23	23	22	29	12	22	30	40				
C 184 C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL	22	22	22	24	12	20	30	40				
D 185 D1-01 DO YOU WORK WITH RC, LC, RCL CIRCUITS IN YOUR PRESENT JOB	68	70	50	71	72	71	70	60				
D 186 D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS	33	33	28	35	36	30	39	40	RCL CIRCUITS			
D 187 D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS	26	26	22	24	32	24	26	40				
D 188 D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS	47	46	50	59	56	41	57	60				
D 189 D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS	46	45	50	59	52	41	52	60				
D 190 D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS	34	34	28	29	44	29	48	40				
D 191 D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS	36	36	39	41	32	36	35	40				
D 192 D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS	25	24	33	24	24	24	22	40				
D 193 D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS	20	20	28	29	8	21	17	40				
D 194 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS	21	21	33	24	8	21	22	40				
D 195 D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS	18	18	33	24	8	18	13	40				
D 196 D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS	21	21	28	24	8	21	13	40				
D 197 D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS	40	39	39	53	32	39	48	40				
D 198 D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS	26	26	28	29	28	24	26	40				
D 199 D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS	29	29	28	29	24	29	30	40				
D 200 D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS	36	35	39	47	32	34	39	40				
D 201 D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS	13	13	17	18	4	13	17	20				
D 202 D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS	17	17	22	18	12	18	17	40				
D 203 D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS	13	14	11	24	4	13	17	20				

PCT MEMBERS RESPONDING 'YES' BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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DT-TSK	SPC							
D 204 D1=20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS	48	48	44	47	48	50	39	60
D 205 D1=21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS	30	29	33	47	36	27	35	40
D 206 D1=22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	19	20	22	41	12	16	17	20
D 207 D1=23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS	20	21	28	41	8	16	22	40
D 208 D1=24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS	14	14	22	24	4	14	13	40
D 209 D1=25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS	22	22	28	35	16	19	26	40
D 210 D1=26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS	13	13	17	24	4	11	17	20
D 211 D1=27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS	11	11	17	18	0	12	9	20
D 212 D1=28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS	14	15	17	18	12	15	9	20
D 213 D1=29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS	11	11	17	12	0	13	9	20
D 214 D1=30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS	23	24	28	41	16	21	26	40
D 215 D1=31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS	12	12	17	12	0	13	17	20
D 216 D1=32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD	14	14	17	18	0	14	17	20
D 217 D1=33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW	20	20	28	35	12	17	26	40
D 218 D1=34 DO YOU CHECK CAPACITORS USING OMMETERS	67	69	44	76	56	70	70	60
D 219 D1=35 DO YOU CHECK CAPACITORS USING SUBSTITUTION	53	54	44	59	36	57	52	40
D 220 D1=36 DO YOU CHECK INDUCTORS USING OMMETERS	59	61	44	71	56	62	52	60
D 221 D1=37 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS	43	43	44	59	28	47	30	40
D 222 D1=38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA = 0, PF = 1, AND PA = PT FOR RESONANT CIRCUITS	6	7	6	6	4	8	4	0
D 223 D1=39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS	15	15	17	24	16	13	26	20
D 224 D1=40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS	22	22	28	41	16	19	30	40
D 225 D1=41 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS	18	18	33	29	12	17	17	40
D 226 D1=42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE	23	24	28	41	8	24	17	40
D 227 D1=43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q	10	10	17	12	9	11	4	20
D 228 D1=44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS	21	21	33	35	0	23	22	40

PCT MEMBERS RESPONDING 'YES' BY SELECTED GRPS  
TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

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01-15K	SPC						SPC						SPC					
	051	052	053	054	055	056	051	052	053	054	055	056	051	052	053	054	055	056
D 229 D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH USE, OR REFER TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS	29	30	22	41	20	29	30	29	30	29	30	26						
D 230 D2-02 DO YOU WORK WITH USE, OR REFER TO TIME CONSTANTS	25	26	22	41	12	24	26	24	26	24	26	20						
D 231 D2-03 DO YOU WORK WITH USE, OR REFER TO AVAILABLE VOLTAGE	16	17	17	18	4	17	17	18	4	17	22	20						
D 232 D2-04 DO YOU WORK WITH USE, OR REFER TO TRANSIENT INTERVALS	6	8	11	18	0	6	8	11	18	0	6	4						
D 233 D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (T <sub>TC</sub> )	18	19	11	35	8	17	22	6	17	22	6							
D 234 D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS	6	6	0	6	0	7	9	0	7	9	0							
D 235 D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS	12	11	17	12	0	10	22	20										
D 236 D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS	11	11	17	18	4	9	17	0										
D 237 D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC TIMES	12	12	17	24	0	11	17	0										
D 238 D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER FIVE (5) TIME CONSTANTS	11	11	11	24	4	9	13	0										
D 239 D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB	54	55	39	47	56	59	52	60										
D 240 D3-02 DO YOU INSPECT FILTER CIRCUITS	52	53	39	47	48	58	48	60										
D 241 D3-03 DO YOU CLEAN FILTER CIRCUITS	36	35	39	35	16	41	35	60										
D 242 D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS	31	31	22	41	26	29	48	40										
D 243 D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL	47	48	28	47	36	53	43	60										
D 244 D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS	55	56	33	47	52	61	52	60										
D 245 D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT	40	39	33	41	40	41	39	40										
D 246 D3-08 DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT PARTS	54	56	28	47	52	61	52	40										
D 247 D3-09 DO YOU WORK WITH LOW PASS FILTERS	34	34	33	35	32	35	30	40										
D 248 D3-10 DO YOU WORK WITH HIGH PASS FILTERS	29	30	28	35	28	31	22	40										
D 249 D3-11 DO YOU WORK WITH BANDPASS FILTERS	19	18	28	24	14	18	16	17										
D 250 D3-12 DO YOU WORK WITH BAND-REJECT FILTERS	15	15	17	18	8	16	17	20										
D 251 D3-13 DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH	23	24	11	12	28	26	21	22										
D 252 D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATION	31	32	22	35	20	36	26	40										
D 253 D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATION	30	31	22	29	16	34	26	40										
D 254 D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION	29	30	28	35	20	32	26	40										
D 255 D3-17 DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION	26	27	6	12	28	29	35	40										
D 256 D3-18 DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT CIRCUITS	25	25	33	29	8	29	22	40										
D 257 D3-19 DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL CIRCUITS	34	34	33	35	16	37	39	40										
D 258 D3-20 DO THE FILTERS YOU WORK WITH USE SERIES RESONANT CIRCUITS	27	26	33	29	8	30	26	40										

SERIES AND PARALLEL RESONANCE  
(TIME CONSTANTS)

PCT MEMBERS RESPONDING \*YES\* BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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DY-1SK

D 259 D3-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT  
 D 260 D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE  
 CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC  
 FILTERS

E 261 E1-01 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB  
 E 262 E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO  
 THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC  
 COUPLING

E 263 E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO  
 THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH  
 IMPEDANCE COUPLING

E 264 E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO  
 THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH  
 TRANSFORMER COUPLING

E 265 E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS  
 WHICH PERFORM RC COUPLING

E 266 E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS  
 WHICH PERFORM IMPEDANCE COUPLING

E 267 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS  
 WHICH PERFORM TRANSFORMER COUPLING

E 268 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS

E 269 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED  
 CIRCUITS

E 270 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED  
 CIRCUITS

E 271 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS  
 E 272 E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS

E 273 E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING  
 TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS

E 274 E2-02 DO YOU SELECT TYPE OF SOLDER TO USE  
 E 275 E2-03 DO YOU ADD FLUX TO CONNECTIONS  
 E 276 E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS  
 E 277 E2-05 DO YOU STRIP INSULATION FROM WIRES  
 E 278 E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS  
 E 279 E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS  
 E 280 E2-08 DO YOU CUT WIRES  
 E 281 E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS  
 E 282 E2-10 DO YOU TIN SOLDERING IRON TIPS  
 E 283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS  
 E 284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS  
 E 285 E2-13 DO YOU TIN OR PRE-TIN CONDUCTIONS  
 E 286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS  
 E 287 E2-15 DO YOU DESOLDER CONNECTIONS BY MELTING  
 E 288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING  
 TOOLS

E 289 E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS  
 E 290 E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL

	SPC 051	SPC 052	SPC 054	SPC 055	SPC 056	SPC 057	SPC 058
D 259 D3-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT	27	20	6	12	32	30	0
D 260 D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS	13	13	17	29	0	12	20
E 261 E1-01 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB	69	70	56	71	60	73	61
E 262 E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC COUPLING	67	68	50	71	56	71	61
E 263 E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING	54	56	44	53	40	60	48
E 264 E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING	66	67	56	71	52	70	61
E 265 E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING	66	67	56	71	52	72	61
E 266 E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING	55	55	50	53	44	58	52
E 267 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING	67	68	50	65	52	72	61
E 268 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS	64	65	56	65	48	68	61
E 269 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS	62	63	56	65	52	66	52
E 270 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS	47	47	50	59	36	47	43
E 271 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS	64	66	50	65	48	69	61
E 272 E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS	19	21	11	18	8	21	30
E 273 E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS	99	98	100	100	100	97	100
E 274 E2-02 DO YOU SELECT TYPE OF SOLDER TO USE	73	72	78	59	76	74	70
E 275 E2-03 DO YOU ADD FLUX TO CONNECTIONS	72	71	63	94	76	64	91
E 276 E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS	71	70	89	71	60	68	87
E 277 E2-05 DO YOU STRIP INSULATION FROM WIRES	98	98	100	94	96	98	100
E 278 E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS	91	90	94	92	90	87	80
E 279 E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS	98	97	100	94	94	98	96
E 280 E2-08 DO YOU CUT WIRES	98	97	100	94	96	98	100
E 281 E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS	79	79	78	84	75	91	86
E 282 E2-10 DO YOU TIN SOLDERING IRON TIPS	94	94	100	94	92	100	100
E 283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS	98	97	100	94	96	97	100
E 284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS	75	75	63	82	64	73	83
E 285 E2-13 DO YOU TIN OR PRE-TIN CONDUCTIONS	94	96	100	94	95	100	100
E 286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS	98	97	100	94	97	100	100
E 287 E2-15 DO YOU DESOLDER CONNECTIONS BY MELTING	53	54	94	59	40	54	70
E 288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING	93	94	98	96	92	100	100
E 289 E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS	82	81	83	82	72	80	96
E 290 E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL	30	29	28	29	4	31	96



**TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING**

		SPC									
	<b>DY-TSK</b>	051	052	053	054	055	056	057	058	059	056
<b>F 327</b>	<b>F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS</b>	77	76	78	71	92	71	96	60		
<b>F 328</b>	<b>F2-02 DO YOU INSPECT SPEAKERS</b>	72	72	67	53	92	68	87	60		
<b>F 329</b>	<b>F2-03 DO YOU CLEAN SPEAKERS</b>	49	48	50	59	20	51	65	60		
<b>F 330</b>	<b>F2-04 DO YOU OPERATE SPEAKERS</b>	74	73	76	53	92	71	87	64		
<b>F 331</b>	<b>F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS</b>	69	68	67	41	72	70	76	60		
<b>F 332</b>	<b>F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS</b>	20	21	17	47	28	16	22	20		
<b>F 333</b>	<b>F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS</b>	70	71	61	59	88	67	83	60		
<b>F 334</b>	<b>F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS</b>	10	11	6	18	12	6	17	20		
<b>F 335</b>	<b>F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES</b>	10	11	0	18	4	11	13	0		
<b>F 336</b>	<b>F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS</b>	4	4	0	12	0	4	4	0		
<b>F 337</b>	<b>F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS</b>	6	7	0	6	12	7	4	0		
<b>F 338</b>	<b>F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS</b>	6	6	0	0	8	7	9	0		
<b>F 339</b>	<b>F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS</b>	7	8	0	0	8	10	4	0		
<b>F 340</b>	<b>F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS</b>	6	6	0	0	8	8	4	0		
<b>F 341</b>	<b>F2-15 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB</b>	5	0	0	0	4	6	4	0		
<b>F 342</b>	<b>F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB</b>	96	96	100	80	96	100	100	100		
<b>F 343</b>	<b>F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS</b>	90	90	89	94	76	92	91	80		
<b>F 344</b>	<b>F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS</b>	92	92	94	100	72	94	96	100		
<b>F 345</b>	<b>F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS</b>	95	95	94	94	76	96	96	100		
<b>F 346</b>	<b>F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY</b>	74	75	67	82	60	77	76	60		
<b>F 347</b>	<b>F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME</b>	47	46	54	71	40	39	74	60		
<b>F 348</b>	<b>F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISANDUS PATTERNS</b>	90	91	33	65	24	39	39	60		
<b>F 349</b>	<b>F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES</b>	77	78	67	82	48	63	74	60		
<b>F 350</b>	<b>F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS</b>	36	39	65	20	35	57	60	60		
<b>F 351</b>	<b>F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE</b>	90	90	94	100	64	95	83	100		
<b>F 352</b>	<b>F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS</b>	69	68	78	82	52	67	78	80		
<b>F 353</b>	<b>F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE</b>	87	86	100	94	68	87	91	100		
<b>G 354</b>	<b>G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB</b>	96	96	100	100	100	95	91	100		
<b>G 355</b>	<b>G1-02 DO YOU INSPECT DIODES</b>	91	91	89	88	92	91	91	100		
<b>G 356</b>	<b>G1-03 DO YOU REMOVE OR REPLACE DIODES</b>	96	95	100	100	100	94	91	100		
<b>G 357</b>	<b>G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT</b>	90	89	100	94	92	87	91	100		
<b>G 358</b>	<b>G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES</b>	7	6	11	0	4	6	4	20		
<b>G 359</b>	<b>G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE LIAS RESISTANCE</b>	14	14	17	12	4	14	22	20		
<b>G 360</b>	<b>G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES</b>	20	19	33	12	12	22	22	60		

PCT MBR'S RESPONDING - YES, BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

QPSUH3 PAGE 14

	SPC								
6 361 GI-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	64	63	78	71	48	65	65	80	
6 362 GI-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE	87	86	89	88	88	84	96	100	
6 363 GI-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	13	15	6	18	4	17	9	0	
6 364 GI-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	50	50	61	65	40	49	52	60	
6 365 GI-12 DO YOU USE OR REFER TO DIODE COLOR CODING	42	42	44	35	40	39	65	60	
6 366 GI-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	2	3	0	6	0	3	0	0	
6 367 GI-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	4	4	0	12	0	5	0	0	
6 368 GI-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538	76	74	94	76	76	71	91	100	
6 369 GI-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	5	5	6	0	0	6	4	20	
6 370 GI-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	5	5	6	0	0	6	4	20	
6 371 GI-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	46	45	61	65	32	45	57	60	
6 372 GI-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	7	7	6	18	8	5	4	20	
6 373 GI-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	4	4	6	6	0	3	4	20	
6 374 GI-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	4	4	0	6	0	4	4	0	
6 375 GI-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	7	7	6	18	12	5	0	20	
6 376 GI-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	5	5	6	6	4	5	0	20	
6 377 GI-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	64	82	100	82	88	80	91	100	
6 378 GI-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	25	25	39	35	20	24	22	20	
6 379 GI-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)	41	42	44	74	32	34	43	60	
6 380 GI-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)	17	18	17	29	4	17	22	20	
6 381 GI-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS	60	60	61	71	56	59	65	40	
6 382 GI-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	7	8	6	12	7	0	20		

PCT MBR'S RESPONDING \*YES\* BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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	DY-TSK					
	SPC	SPC	SPC	SPC	SPC	SPC
	051	052	053	054	055	056
G 383 G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	6	7	0	4	4	0
G 384 G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	9	9	11	6	8	4
G 385 G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	6	6	6	4	7	0
G 386 G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	10	10	6	12	12	4
G 387 G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	21	21	22	16	24	17
G 388 G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	6	8	11	18	6	7
G 389 G1-36 DO YOU USE OR REFER TO ACCEPATOR IMPURITY IN SEMICONDUCTORS	7	7	11	18	4	6
G 390 G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	33	31	39	44	27	35
G 391 G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	33	31	39	44	27	35
G 392 G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	12	12	11	12	12	9
G 393 G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	12	12	11	12	11	9
G 394 G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	10	10	11	6	12	10
G 395 G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	9	9	11	6	8	10
G 396 G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	12	12	11	18	16	10
G 397 G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	27	27	44	76	6	25
G 398 G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	4	5	0	0	0	7
G 399 G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	45	44	53	46	41	45
G 400 G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	21	20	39	29	12	16
G 401 G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	16	16	22	16	8	14
G 402 G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	25	24	33	24	21	35
G 403 G1-50 DO YOU USE OR REFER TO PEAK HEVERSE (INVERSE) VOLTAGE DIODE RATINGS	33	33	39	47	32	30
G 404 G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	63	60	94	94	74	100
G 405 G2-02 DO YOU INSPECT TRANSISTORS	61	59	69	88	72	100
G 406 G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	63	60	100	94	80	100
G 407 G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	55	52	89	88	76	100
G 408 G2-05 DO YOU USE OR REFER TO Emitter - Base (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	43	91	78	68	52	25
G 409 G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	42	39	78	88	52	24

TRANSISTORS

PCT MBR'S RESPONDING (YES) BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

GP5UM3 PAGE 16

	D-Y-TSK						SPC					
	SPC C5-1	SPC C5-2	SPC C5-3	SPC C5-4	SPC C5-5	SPC C5-6	SPC C5-7	SPC C5-8	SPC C5-9	SPC C5-10	SPC C5-11	
G 410 G2-07 DO YOU USE OR REFER TO Emitter - COLLECTOR (EC) RESISTANCE MEASUREMENTS	41	38	76	88	56	22	78	100				
G 411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE Emitter - BASE JUNCTION	16	17	11	41	16	11	30	20				
G 412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	15	16	6	41	20	10	26	20				
G 413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND Emitter)	28	26	50	71	20	18	48	60				
G 414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	13	12	22	29	16	8	22	20				
G 415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	61	58	100	88	68	46	100	100				
G 416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	59	56	94	88	60	45	96	100				
G 417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	44	42	56	76	44	34	70	40				
G 418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY SMALLER THAN THE Emitter CURRENT IE USUALLY IB BEING 2 TO 8 PERCENT OF IE	18	18	22	29	16	13	39	20				
G 419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF Emitter BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS	30	28	50	53	20	22	61	40				
G 420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	15	14	33	24	8	11	26	40				
G 421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	15	15	22	24	12	9	39	40				
G 422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	13	13	17	29	8	10	17	0				
G 423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	11	11	17	29	4	9	13	0				
G 424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	11	12	11	29	4	9	17	0				
G 425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS	7	6	11	12	0	6	13	0				
G 426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS	6	6	11	12	0	5	13	0				
G 427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS	6	6	4	12	0	5	13	0				
G 428 G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	41	38	67	53	36	29	87	60				
G 429 G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS	39	36	67	47	36	27	83	60	TRANSISTOR			
G 430 G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	35	32	61	41	28	24	83	60	AMPLIFIERS			
G 431 G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	36	35	67	47	32	25	87	60				
G 432 G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	37	34	61	47	36	24	83	60				
G 433 G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	36	33	72	47	36	22	87	60				
G 434 G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	37	35	61	53	36	25	78	60				
G 435 G3-08 DO YOU USE OR REFER TO (COMMON Emitter) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT	14	22	18	12	9	30	20					
G 436 G3-09 DO YOU USE OR REFER TO (COMMON Emitter) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	7	6	17	0	4	5	17	20				

PCT MEMBERS RESPONDING \*YES\* BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

GFSUM3 PAGE 17

GRPS	SPC										
DR-TSK											
6 437 G3-10 DO YOU USE OR REFER TO (COMMON Emitter) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT	1.3	1.3	2.2	2.4	4	9	9	3.0	2.0		
6 438 G3-11 DO YOU USE OR REFER TO (COMMON Emitter) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	1.0	9	1.7	6	8	7	7	2.2	2.0		
6 439 G3-12 DO YOU USE OR REFER TO (COMMON Emitter) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	1.3	1.3	1.7	1.8	1.2	1.0	2.2	2.0			
6 440 G3-13 DO YOU USE OR REFER TO (COMMON Emitter) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL	1.0	1.0	1.1	6	8	8	2.2	2.0			
6 441 G3-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)	2	2	6	0	0	2	9	2.0			
6 442 G3-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	6	5	1.7	6	4	4	4	1.3	4.0		
6 443 G3-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	2	2	6	0	0	1	9	2.0			
6 444 G3-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON Emitter CONFIGURATION	2.5	2.3	4.4	2.9	2.0	1.9	5.2	4.0			
6 445 G3-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON Emitter CONFIGURATION	1.6	1.5	2.2	6	2.0	1.2	3.9	4.0			
6 446 G3-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON Emitter CONFIGURATION	1.3	1.3	2.2	6	1.2	1.1	3.0	4.0			
6 447 G3-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS: DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN	5	4	1.1	0	4	3	1.3	2.0			
6 448 G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS: DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN	4	4	1.1	0	4	3	1.3	2.0			
6 449 G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS: DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN	3	2	1.1	0	0	3	4	2.0			
6 450 G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT EQJ OF THE TRANSISTOR)	6	6	6	6	0	6	1.7	2.0			
6 451 G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT EQJ OF A TRANSISTOR AT DIFFERENT TEMPERATURES	1	1	0	0	0	2	0	0			
6 452 G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH Emitter ISMINGI RESISTOR STABILIZATION	2.0	1.9	2.8	2.4	1.2	1.6	4.3	4.0			
6 453 G3-26 DC YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION	1.7	1.6	2.8	1.8	0	1.3	3.9	4.0			

### TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

SYSTEN	051	052	053	054	055	056	057	058
G 454 G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION	13	13	22	12	4	12	30	40
G 455 G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION	16	16	22	18	16	13	35	40
G 456 G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION	16	16	22	16	16	12	39	40
G 457 G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION	15	15	22	12	8	13	35	40
G 458 G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM Emitter (SWAMPING) RESISTOR STABILIZATION	20	19	28	18	16	14	52	60
G 459 G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	20	19	28	18	12	14	57	60
G 460 G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	15	15	22	12	6	12	39	60
G 461 G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD DIODE STABILIZATION	19	18	22	16	14	14	43	60
G 462 G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	19	18	22	16	16	14	43	60
G 463 G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	15	15	22	12	8	13	35	60
G 464 G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	21	20	28	29	24	13	98	40
G 465 G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	25	23	39	35	24	18	48	40
G 466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	18	17	28	24	12	15	35	40
G 467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	16	16	28	18	16	14	26	40
G 468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	17	16	28	18	12	16	26	40
G 469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	18	17	22	24	12	15	30	40
G 470 G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING Emitter RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION	10	9	22	16	8	7	22	40
G 471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	13	13	17	24	9	10	35	20
G 472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PARASOURCE AMPLIFIERS	20	19	22	24	8	16	43	40
G 473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	30	29	35	32	23	65	40	40
G 474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	16	15	28	12	4	13	39	40
G 475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	17	17	22	18	12	13	48	40

PCT HRS RESPONDING •YES• BY SELECTED GROUPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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DY-TSK	G 476 G3=49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS									
	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	SPC 058	SPC 059	SPC 060
H 477 H1=01 DO YOU USE OR REFER TO VARACTORS	12	12	6	12	8	13	17	20		
H 478 H1=02 DO YOU USE OR REFER TO TUNNEL DIODES	18	16	22	24	12	16	10	40	SOLID-STATE	
H 479 H1=03 DO YOU USE OR REFER TO FIELD-EFFECT TRANSISTORS (FET)	23	21	44	24	13	13	57	80	SPECIAL PURPOSE	
H 480 H1=04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	17	16	28	24	16	11	39	40	DEVICES	
H 481 H1=05 DO YOU USE OR REFER TO ZENER DIODES	58	56	63	59	52	53	78	80		
H 482 H1=06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	47	44	78	41	52	40	61	80		
H 483 H2=01 IN YOU PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	93	94	89	100	92	92	100	100		
H 484 H2=02 DO YOU INSPECT POWER SUPPLIES	91	91	89	94	88	91	96	80		
H 485 H2=03 DO YOU CLEAN POWER SUPPLIES	78	78	76	76	60	81	83	100	POWER SUPPLIES	
H 486 H2=04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	87	88	78	94	84	86	96	60		
H 487 H2=05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	68	68	89	94	76	88	96	80		
H 488 H2=06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	86	87	72	94	72	87	100	80		
H 489 H2=07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	84	84	89	94	92	78	100	100		
H 490 H2=08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	86	87	78	94	80	87	96	100		
H 491 H2=09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	73	75	50	71	48	61	76	40		
H 492 H2=10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	72	39	71	52	80	74	40			
H 493 H2=11 DO YOU WORK WITH BRIDGE RECTIFIERS	76	78	50	65	52	84	83	40		
H 494 H2=12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	55	57	28	29	36	65	65	40		
H 495 H2=13 DO YOU USE OR REFER TO INPUT VOLTAGE	82	84	50	76	68	87	91	40		
H 496 H2=14 DO YOU USE OR REFER TO INPUT FREQUENCY	59	62	33	59	44	62	70	40		
H 497 H2=15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	69	71	39	65	56	75	74	40		
H 498 H2=16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	68	70	44	71	44	71	87	40		
H 499 H2=17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	55	57	39	59	36	60	65	40		
H 500 H2=18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	46	48	33	41	36	47	61	40		
H 501 H2=19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	45	45	39	53	32	47	52	40		
H 502 H2=20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	69	70	39	59	26	82	70	40		
H 503 H2=21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	70	73	39	65	52	78	74	40		
H 504 H2=22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	63	64	44	47	47	70	65	60		
H 505 H2=23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	53	54	39	41	36	61	48	60		
H 506 H2=24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	50	50	39	35	40	55	48	60		
H 507 H2=25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	45	45	39	35	32	50	43	60		
H 508 H2=26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	37	37	33	35	32	39	35	60		
H 509 H2=27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	47	48	39	41	32	53	39	60		
H 510 H2=28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	45	45	44	47	48	43	39	60		
H 511 H2=29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	5	5	11	6	0	6	0	0		
H 512 H3=01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	45	46	28	59	64	41	52	20		

PCT HRS RESPONDING 'YES' BY SELECTED GROUPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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ITEM	SPC	SPC		SPC									
		US1	US2	US3	US4	US5	US6	US7	US8	US9	US10	US11	US12
H 513 H-02 DO YOU INSPECT OSCILLATORS	44	45	28	53	56	41	57	40					
H 514 H-03 DO YOU ALIGN OR ADJUST OSCILLATORS	39	39	33	47	32	39	52	40					
H 515 H-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	34	35	28	41	44	31	48	40					
H 516 H-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	38	38	33	47	48	34	39	40					
H 517 H-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	41	42	33	47	52	39	46	40					
H 518 H-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	38	39	33	47	48	37	39	40					
H 519 H-08 DO YOU USE OR REFER TO FEEDBACK	42	43	39	53	56	40	39	40					
H 520 H-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES	20	21	17	35	20	18	22	20					
(FDD)													
H 521 H-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	28	29	28	47	32	26	26	40					
H 522 H-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	30	30	33	47	28	29	30	40					
H 523 H-12 DO YOU USE OR REFER TO DAMPING	31	30	39	35	36	29	35	40					
H 524 H-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	38	38	33	41	48	37	39	40					
H 525 H-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	8	9	6	18	6	8	4	0					
H 526 H-15 DO YOU USE OR REFER TO CRITICAL DAMPING	12	13	11	18	8	14	9	20					
H 527 H-16 DO YOU USE OR REFER TO UNDER DAMPING	15	15	11	18	16	14	17	20					
H 528 H-17 DO YOU USE OR REFER TO OVER DAMPING	15	15	11	18	16	14	17	20					
H 529 H-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	26	28	35	32	32	24	26	40					
H 530 H-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	29	29	28	35	40	27	30	40					
H 531 H-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	6	6	11	0	16	7	9	20					
H 532 H-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	18	16	17	35	16	18	17	0					
H 533 H-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	14	15	6	24	28	12	9	0					
H 534 H-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	13	14	6	24	28	11	9	0					
H 535 H-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	13	14	6	24	28	9	13	0					
H 536 H-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	4	4	0	0	4	5	4	0					
H 537 H-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	3	4	0	4	5	0	0	0					
H 538 H-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	27	26	39	35	36	24	26	40					
I 539 II-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	29	27	44	53	28	18	45	60					
I 540 II-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	23	23	33	41	16	16	52	60					
I 541 II-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	21	21	33	47	9	9	48	50					
I 542 II-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	19	18	28	29	4	15	48	20					
I 543 II-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	23	23	33	41	20	15	52	20					
I 544 II-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	22	22	28	41	12	16	52	20					
I 545 II-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	19	19	33	47	16	10	48	20					
I 546 II-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING CIRCUITS	22	23	28	47	12	16	52	20					
I 547 II-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	12	12	17	24	12	9	17	20					

OSCILLATORS

MULTIVIBRATORS

### TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

### THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID VOLTAGE

PCT MEMBERS RESPONDING 'YES' BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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		SPC G51	SPC G52	SPC G53	SPC G54	SPC G55	SPC G56	SPC G57	SPC G58
DY-TSK									
1 586	13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	13	14	0	12	4	15	13	0
1 587	13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	22	23	17	24	20	24	17	40
1 588	13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MOHS)	10	11	0	6	8	11	4	0
1 589	13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES	8	9	0	0	0	10	9	0
1 590	13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	18	19	0	12	8	22	17	0
1 591	13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	11	12	0	0	0	14	13	0
1 592	13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	25	26	28	41	12	27	17	20
1 593	13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	18	19	11	24	6	18	26	0
1 594	13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	9	10	6	0	4	11	9	20
1 595	13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	8	9	6	0	4	10	4	20
1 596	13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	14	14	17	0	12	16	9	20
1 597	13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	14	14	17	0	12	16	13	20
1 598	13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	75	75	83	71	72	77	70	100
1 599	13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	36	36	39	53	24	35	35	80
1 600	13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	65	68	56	82	52	71	52	60
1 601	13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	57	57	61	47	44	63	52	40
1 602	13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	59	59	72	91	24	71	43	60
1 603	13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	14	15	17	6	8	15	17	40
1 604	13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	9	10	0	0	4	12	4	0
1 605	13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	89	89	89	94	72	92	87	80
1 606	13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	94	94	89	94	74	98	91	100
1 607	13-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL ON THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE ELECTRON TUBE(S) YOU WORK ON	10	11	6	8	10	4	20	
1 608	13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	49	49	56	71	32	45	65	60
J 609	J-101 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	94	95	89	94	84	97	91	80
J 610	J-102 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	29	30	22	29	16	34	26	20



PCT HQNS RESPONDING 'YES' BY SELECTED GRPS  
TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

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	Y-T-TK		SPC											
	051	052	053	054	055	056	057	058	051	052	053	054	055	056
K 642 K1=05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	2	2	0	0	0	0	3	0	0	0	0	0	0	0
K 643 K1=06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	2	2	0	0	0	0	3	0	0	0	0	0	0	0
K 644 K1=07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	2	2	0	0	0	0	3	0	0	0	0	0	0	0
K 645 K1=08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	2	2	0	0	0	0	3	0	0	0	0	0	0	0
K 646 K1=09 DO YOU PERFORM TASKS ON RF OSCILLATORS	0	1	0	0	0	0	0	0	0	0	0	0	0	0
K 647 K1=10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	1	1	0	0	0	0	0	0	0	0	0	0	0	0
K 648 K1=11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	1	2	0	0	0	0	0	0	0	0	0	0	0	0
K 649 K1=12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	1	1	0	0	0	0	0	0	0	0	0	0	0	0
K 650 K1=13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	0	1	0	0	0	0	0	0	0	0	0	0	0	0
K 651 K1=14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 652 K1=15 DO YOU PERFORM TASKS ON DETECTORS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 653 K1=16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 654 K1=17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 655 K1=18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	1	1	0	0	0	0	0	0	0	0	0	0	0	0
K 656 K1=19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 657 K1=20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 658 K1=21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 659 K1=22 DO YOU USE OR REFER TO BANDPASS DISTORTION	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 660 K1=23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 661 K1=24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 662 K1=25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 663 K1=26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 664 K1=27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	2	2	0	0	0	0	4	3	0	0	0	0	0	0
K 665 K1=28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	1	1	0	0	0	0	0	2	0	0	0	0	0	0
K 666 K2=01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	2	2	6	0	0	0	3	4	0	0	0	0	0	0
K 667 K2=02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	0	0	0	0	2	0	0	0	0	0	0
K 668 K2=03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	0	0	0	0	2	0	0	0	0	0	0
K 669 K2=04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	0	0	0	0	2	0	0	0	0	0	0
K 670 K2=05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	0	0	0	0	2	0	0	0	0	0	0
K 671 K2=06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	1	1	0	0	0	0	0	2	0	0	0	0	0	0
K 672 K2=07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	1	2	0	0	0	0	0	3	0	0	0	0	0	0
K 673 K2=08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	1	1	0	0	0	0	0	2	0	0	0	0	0	0
K 674 K2=09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	1	1	0	0	0	0	0	2	0	0	0	0	0	0
K 675 K2=10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	0	1	0	0	0	0	0	1	0	0	0	0	0	0

PCT MBR'S RESPONDING \*YES\* BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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	U/T-15K	SPC				SPC				SPC				
		051	052	053	054	055	056	057	058	059	060	061	062	063
K 676 K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE		0	1	0	0	0	0	1	0	0	1	0	0	0
AMPLIFIERS)														
K 677 K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS		0	1	0	0	0	0	0	1	0	0	0	0	0
RF AMPLIFIERS														
K 678 K2-13 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS		0	1	0	0	0	0	0	1	0	0	0	0	0
IF AMPLIFIERS														
K 679 K2-14 DO YOU PERFORM TASKS ON LIMITERS		0	1	0	0	0	0	0	1	0	0	0	0	0
DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS														
K 680 K2-15 DO YOU PERFORM TASKS ON CURRENT PATHS THROUGH		0	1	0	0	0	0	0	1	0	0	0	0	0
SCHEMATIC DIAGRAMS OF FM TRANSMITTERS														
K 681 K2-16 DO YOU PERFORM TASKS ON CURRENT PATHS THROUGH		0	1	0	0	0	0	0	1	0	0	0	0	0
SCHEMATIC DIAGRAMS OF FM RECEIVERS														
K 685 K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL		9	9	6	6	20	5	24	6	30	0	0	0	0
(BASE 8) NUMBERS														
K 686 K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2)		10	10	0	0	24	6	24	6	30	0	0	0	0
NUMBERS														
K 687 K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS		9	9	6	6	20	5	24	6	30	0	0	0	0
DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS														
K 688 K3-04 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS		8	8	0	0	20	5	24	6	30	0	0	0	0
DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS														
K 689 K3-05 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS		10	10	0	0	24	6	24	6	30	0	0	0	0
DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS														
K 690 K3-06 DO YOU ADD BINARY NUMBERS TO GET A SUM		8	8	0	0	20	5	24	6	30	0	0	0	0
DO YOU ADD BINARY NUMBERS USING THE END-AROUND-														
K 692 K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD		8	8	0	0	24	4	24	4	22	0	0	0	0
SUBTRACTION METHOD														
K 693 K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT		8	8	0	0	24	4	24	4	22	0	0	0	0
SUBTRACTION METHOD														
K 694 K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM		8	8	0	0	20	5	22	0	0	0	0	0	0
DO YOU ADD OCTAL NUMBERS TO GET A SUM														
L 695 LI-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS		15	15	6	12	24	13	26	0	0	0	0	0	0
RELATING TO LOGIC FUNCTIONS														
L 696 LI-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS		9	9	0	6	20	6	22	0	0	0	0	0	0
OR GATES														
L 697 LI-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS		9	9	0	6	20	6	22	0	0	0	0	0	0
OR GATES														
L 698 LI-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS		6	6	0	6	16	6	17	0	0	0	0	0	0
STATE INDICATORS														
L 699 LI-05 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES		7	8	0	0	20	6	13	0	0	0	0	0	0
LOGIC SYMBOLS WITH STATE INDICATORS														
L 700 LI-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES		10	10	0	6	24	7	22	0	0	0	0	0	0
LOGIC SYMBOLS														
L 701 LI-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES		10	10	0	6	24	7	22	0	0	0	0	0	0
LOGIC SYMBOLS														
L 702 LI-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR LOGIC SYMBOLS		9	9	0	0	20	7	22	0	0	0	0	0	0
LOGIC SYMBOLS WITH STATE INDICATORS														
L 703 LI-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS		9	9	0	0	24	7	17	0	0	0	0	0	0
LOGIC SYMBOLS														
L 704 LI-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES		10	10	0	6	24	7	22	0	0	0	0	0	0
LOGIC SYMBOLS														
L 705 LI-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES		10	10	0	6	20	7	22	0	0	0	0	0	0
LOGIC SYMBOLS														
L 706 LI-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES		10	10	0	6	20	7	22	0	0	0	0	0	0

PCT MANS RESPONDING \*YES\* BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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WT-15A	SPC U-1	SPC U-2	SPC U-3	SPC U-4	SPC U-5	SPC U-6	SPC U-7	SPC U-8	SPC U-9	SPC U-10	SPC U-11	SPC U-12	SPC U-13	SPC U-14	SPC U-15
L 707 L-1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	5	5	6	0	0	0	24	6	22	0					
L 708 L-2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS	5	5	0	0	0	0	0	0	0						
L 709 L-2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DTCL) CIRCUITS	5	5	0	0	0	0	0	4	13	0					
L 710 L-2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CM), CIRCUITS	4	4	0	0	0	0	0	4	9	0					
L 711 L-2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	6	6	0	0	0	0	16	4	13	0					
L 712 L-2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	7	4	0	0	0	0	16	4	22	0					
L 713 L-2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	6	6	0	0	0	0	16	4	13	0					
L 714 L-2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	5	5	0	0	0	0	12	4	13	0					
L 715 L-2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DTCL) CIRCUIT GATES	5	5	0	0	0	0	8	4	13	0					
L 716 L-2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CM), CIRCUITS	4	4	0	0	0	0	8	4	9	0					
L 717 L-2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	6	6	0	0	0	0	16	4	13	0					
L 718 L-2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	4	4	0	0	0	0	12	4	4	0					
L 719 L-2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	5	5	0	0	0	0	12	4	9	0					
L 720 L-2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	4	4	0	0	0	0	16	5	13	0					
L 721 L-2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	7	7	0	0	0	0	16	5	22	0					
L 722 L-2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	7	7	0	0	0	0	16	5	17	0					
L 723 L-2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	5	5	0	0	0	0	12	3	17	0					
L 724 L-2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	5	5	0	0	0	0	12	3	13	0					
L 725 L-2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	6	5	0	0	0	0	12	3	22	0					
L 726 L-2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	5	5	0	0	0	0	12	3	13	0					
L 727 L-2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	5	5	0	0	0	0	12	3	17	0					
L 728 L-2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	5	5	0	0	0	0	12	3	17	0					
L 729 L-2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	5	5	0	0	0	0	12	3	13	0					
L 730 L-2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	4	6	0	0	0	0	16	3	22	0					
L 731 L-2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	6	6	0	0	0	0	16	3	22	0					
L 732 L-2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	4	4	0	0	0	0	12	3	13	0					



PCT MBR'S RESPONDING \*YES\* BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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	TASK	GROUP	SUMMARY	PERCENT MEMBERS PERFORMING						SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	
				051	052	053	054	055	056									
			SY-TEK															
H 761	M1-05	DO	YOU WORK WITH BLOCKING OSCILLATORS	10	10	11	24	8	8	13	0							
H 762	M1-06	DC	YOU USE OR REFER TO RISE TIME	15	15	22	47	4	10	35	20							
H 763	M1-07	DO	YOU USE OR REFER TO FALL OR FLYBACK TIME	13	13	17	41	0	9	30	20							
H 764	M1-08	DC	YOU USE OR REFER TO SWEEP TIME	22	23	22	47	12	17	52	20							
H 765	M1-09	DO	YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH	19	20	17	65	8	11	52	20							
			WAVEFORMS															
H 766	M1-10	DO	YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH	16	19	17	65	4	12	43	20							
			WAVEFORMS															
H 767	M1-11	DO	YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH	16	18	22	53	4	10	57	20							
			WAVEFORMS															
H 768	M1-12	DO	YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH	16	16	17	53	4	6	52	20							
			WAVEFORMS															
H 769	M2-01	DO	YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	16	16	11	41	4	14	30	20							
H 770	M2-02	DO	YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	15	15	11	41	4	12	30	20	USE OF SIGNAL GENERATORS						
H 771	M2-03	DO	YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	15	15	17	29	4	14	26	40							
H 772	M2-04	DO	YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	14	15	11	29	4	13	26	20							
H 773	M2-05	DO	YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	13	13	11	29	4	12	22	20							
H 774	M2-06	DO	YOU USE AUDIO SINE-WAVE GENERATORS	11	11	6	12	4	11	26	20							
H 775	M2-07	DO	YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	9	9	6	12	4	8	26	20							
H 776	M2-08	DO	YOU USE RF GENERATORS LESS THAN 1,000 MH	5	5	0	6	0	7	9	0							
H 777	M2-09	DO	YOU USE RF GENERATORS GREATER THAN 1,000 MH	2	3	0	0	0	4	0	0							
H 778	M2-10	DO	YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	8	8	11	12	4	7	17	20							
H 779	M3-01	DO	IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS	95	96	89	100	86	97	100	100	MOTORS AND GENERATORS						
H 780	M3-02	DO	YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	92	92	69	100	84	94	91	91							
H 781	M3-03	DO	YOU INSPECT MOTORS	69	90	83	100	88	89	91	100							
H 782	M3-04	DO	YOU CLEAN OR LUBRICATE MOTORS	86	86	78	94	76	87	94	90							
H 783	M3-05	DO	YOU OPERATE MOTORS	94	94	94	100	84	95	100	100							
H 784	M3-06	DO	YOU REMOVE OR REPLACE COMPLETE MOTORS	61	50	82	74	55	61	60								
H 785	M3-07	DO	YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	95	94	100	86	97	100	100								
H 786	M3-08	DO	YOU TROUBLESHOOT DOWN TO FIELD COILS	53	55	39	76	68	52	39	40							
H 787	M3-09	DO	YOU PERFORM ANY TASKS ON ARMATURES	28	29	22	35	20	30	22								
H 788	M3-10	DO	YOU TROUBLESHOOT DOWN TO ROTORS	38	39	53	52	34	35	40								
H 789	M3-11	DO	YOU PERFORM ANY TASKS ON BRUSHES	37	37	39	53	32	34	30								
H 790	M3-12	DO	YOU PERFORM ANY TASKS ON SLIP RINGS	57	58	50	82	72	53	52	100							
H 791	M3-13	DO	YOU PERFORM ANY TASKS ON COMMUTATORS	44	44	45	40	41	43	43	80							
H 792	M3-14	DO	YOU PERFORM ANY TASKS ON POLE PIECES	44	44	39	46	41	43	43	80							
H 793	M3-15	DO	YOU PERFORM ANY TASKS ON	27	28	17	24	24	22	22	20							

PCT MEMBERS RESPONDING 'YES' BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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DO-TSK

		SPC G51	SPC G52	SPC G53	SPC G54	SPC G55	SPC G56	SPC G57	SPC G58
N 794	M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	16	17	6	12	0	22	9	20
N 795	M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	31	32	33	47	20	34	26	20
N 796	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE OK DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	25	25	22	29	8	28	22	40
N 797	M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	68	69	56	41	56	71	63	80
N 798	M3-20 DO YOU WORK WITH INDUCTION MOTORS	69	70	61	71	72	68	74	60
N 799	M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	55	57	44	47	64	55	52	60
N 800	M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	65	66	56	65	65	65	63	60
N 801	M3-23 DO YOU INSPECT GENERATORS	89	90	78	78	80	92	91	60
N 802	M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS	81	83	67	94	76	84	83	60
N 803	M3-25 DO YOU OPERATE GENERATORS	80	81	67	68	72	62	63	60
N 804	M3-26 DO YOU REMOVE OR REPLACE GENERATOR PARTS	88	88	88	89	94	96	91	80
N 805	M3-27 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	58	60	39	71	76	56	52	90
N 806	M3-28 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	50	52	39	71	68	50	35	20
N 808	N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	87	86	94	100	88	87	74	100
N 809	N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	20	21	17	24	12	23	13	0
N 810	N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	21	22	17	24	16	24	13	0
N 811	N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	21	22	17	24	12	23	17	0
N 812	N1-05 DO YOU READ METER SCALES	88	87	94	94	88	89	74	100
N 813	N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	36	36	33	37	32	35	35	60
N 814	N1-07 DO YOU ZERO OHMMETERS	66	85	94	94	84	87	74	100
N 815	N1-08 DO YOU EXTEND THE RANGE OF VOLTMETERS	39	39	53	53	36	43	60	0
N 816	N1-09 DO YOU EXTEND THE RANGE OF VOLTmeter SENSITIVITY [EXPRESSED IN UNITS OF OHMS PER VOLT]	53	53	61	47	56	54	57	60
N 818	N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	26	39	76	56	66	43	60	0
N 819	N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	26	24	44	71	48	8	52	20
N 820	N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	18	17	33	53	28	5	43	20
N 821	N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	23	22	39	53	48	7	52	0
N 822	N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	26	24	44	71	52	6	52	10
N 823	N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	24	23	39	65	44	8	52	20
N 824	N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	18	17	28	59	20	7	43	10

SATURABLE REACTORS  
 AND MAGNETIC  
 AMPLIFIERS

SYMBOL	DEFINITION	SYMBOL	DEFINITION	SYMBOL	DEFINITION	SYMBOL	DEFINITION	SYMBOL	DEFINITION	SYMBOL	DEFINITION	SYMBOL	DEFINITION	SYMBOL	DEFINITION	SYMBOL	DEFINITION	SYMBOL	DEFINITION		
N 825 N2=08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	TO DEVELOP OUTPUT	N 826 N2=09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT	WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF	N 827 N2=10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR	SINGLE WINDING SATURABLE REACTORS	N 828 N2=11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT	WAVEFORMS FOR MAGNETIC AMPLIFIERS	N 829 N2=12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE	REACTORS	N 830 N2=13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN	SATURABLE REACTORS	N 831 N2=14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE	REACTORS	N 832 N2=15 DO YOU USE OR REFER TO POINT OF SATURATION IN	SATURABLE REACTORS	N 833 N2=16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC	SYMBOLS	N 834 N3=01 DO YOU WORK WITH WAVE SHAPING CIRCUITS IN YOUR PRESENT	JOB		
N 835 N3=02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	OR PULSE WIDTH (PWT)	N 836 N3=03 DO YOU USE OR REFER TO PULSE RECURRENT TIME (PRT)	OR PULSE RECURRENT FREQUENCY (PRF)	N 837 N3=04 DO YOU USE OR REFER TO PULSE RECURRENT TIME (PRT)	OR PULSE RECURRENT FREQUENCY (PRF)	N 838 N3=05 DO YOU USE OR REFER TO PULSE RECURRENT TIME (PRT)	OR PULSE RECURRENT FREQUENCY (PRF)	N 839 N3=06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	OR PULSE RECURRENT TIME (PRT)	N 840 N3=07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	OR PULSE RECURRENT FREQUENCY (PRF)	N 841 N3=08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME	CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT	N 842 N3=09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS	DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT	N 843 N3=10 DO YOU WORK WITH SQUARE WAVE GENERATORS	AND OUTPUT CONFIGURATION	N 844 N3=11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	JOB	N 845 O1=01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR	PRESENT
O 846 O1=02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS	O 847 O1=03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS	O 848 O1=04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS	O 849 O1=05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE	O 850 O1=06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE	COMPONENTS	O 851 O1=07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 852 O1=08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	COMPONENTS	O 853 O1=09 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 854 O1=10 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 855 O1=11 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 856 O1=12 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS				
O 857 O1=13 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 858 O1=14 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 859 O1=15 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 860 O1=16 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 861 O1=17 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 862 O1=18 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 863 O1=19 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 864 O1=20 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS	O 865 O1=21 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	SYSTEMS				

PCT MARS RESPONDING 'YES' BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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LY-TSK	SPC										SPC									
	051	052	053	054	055	056	057	058	059	060	061	062	063	064	065	066	067	068		
0 853 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 854 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 855 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 856 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 857 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 858 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 859 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 860 01-16 DO YOU PERFORM TASKS ON SSB MIXERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 861 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 862 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 863 01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 864 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 865 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 866 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 867 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SYSTEM STAGES																				
0 868 01-24 DO YOU USE OR REFER TO SELECTIVE FADING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 869 01-25 DO YOU USE OR REFER TO PEAK POWER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 870 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 871 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
BANDWIDTH FILTERS																				
0 872 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TRANSMITTERS																				
0 873 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TRANSMITTER SCHEMATIC DIAGRAMS																				
0 874 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RECEIVER SCHEMATIC DIAGRAMS																				
0 875 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR	7	8	6	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PRESENT JOB																				
0 876 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS	7	8	6	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 877 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS	7	8	6	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 878 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS	7	8	6	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 879 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	8	9	6	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 880 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	6	9	6	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
COMPONENTS																				
0 881 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	8	9	6	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 882 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	7	8	6	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
COMPONENTS																				
0 883 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM)	6	6	6	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SYSTEMS																				
0 884 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM)	6	6	6	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SYSTEMS																				
0 885 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM)	5	5	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SYSTEMS																				
0 886 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	4	4	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 887 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS	4	5	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 888 02-14 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEM	4	5	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

PULSE MODULATION SYSTEMS







TASK GROUP SUMMARY PRESENT MEMBERS PERFORMING

P 971 PI-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS

P 972 PI-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING

P 973 PI-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA

P 974 PI-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z<sub>0</sub>) OF TRANSMISSION LINES

P 975 PI-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z<sub>0</sub>) OF TRANSMISSION LINES

P 976 PI-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES

P 977 PI-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES

P 978 PI-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES

P 979 PI-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES

P 980 PI-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES

P 981 PI-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES

P 982 PI-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES

P 983 PI-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING

P 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB

P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS

P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS

P 987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS

P 988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS

P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS

P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS

P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS

P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDE SECTIONS

P 993 P2-10 DO YOU REMOVE OR INSTALL DUMMY LOADS

P 994 P2-11 DO YOU REMOVE OR INSTALL E BENDS

P 995 P2-12 DO YOU REMOVE OR INSTALL H BENDS

P 996 P2-13 DO YOU REMOVE OR INSTALL OTHER BENDS

P 997 P2-14 DO YOU REMOVE OR INSTALL CHOKE JOINTS

P 998 P2-15 DO YOU REMOVE OR INSTALL ROTATING JOINTS

P 999 P2-16 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS

P 0001 P2-17 DO YOU REMOVE OR INSTALL BI DIRECTIONAL COUPLERS

P 0002 P2-18 DO YOU REMOVE OR REFER TO A WALL OF WAVEGUIDES

P 0003 P2-19 DO YOU USE OR REFER TO A WALL OF WAVEGUIDES



	SPC 054	SPC 055	SPC 056	SPC 057	SPC 058
P1025 P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0
P1026 P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0
P1027 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0
P1028 P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0
P1029 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	0	0	0	0	0
P1030 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	0	0	0	0	0
P1031 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	0	0	0	0	0
P1032 P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	0	0	0	0	0
P1033 P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	0	0	0	0	0
P1034 P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS	0	0	0	0	0
P1035 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	0	0	0	0	0
P1036 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	0	0	0	0	0
P1037 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE	0	0	0	0	0
P1038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY	0	0	0	0	0
P1039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	0	0	0	0	0
P1040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING	0	0	0	0	0
P1041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS	0	0	0	0	0
P1042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS	0	0	0	0	0
P1043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS	0	0	0	0	0
P1044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)	0	0	0	0	0
P1045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS	0	0	0	0	0
P1046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	0	0	0	0	0
P1047 P3-14 DO YOU WORK WITH MAGNETRONS	0	0	0	0	0
P1048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT	0	0	0	0	0
P1049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT	0	0	0	0	0
P1050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	0	0	0	0	0
P1051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY	0	0	0	0	0
P1052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	0	0	0	0	0
P1053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT	0	0	0	0	0
P1054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTROPOW OR TWT	0	0	0	0	0
P1055 P3-22 DO YOU REMOVE OR REPLACE KLYSTROKON OR TWT COMPONENTS	0	0	0	0	0
P1056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS	0	0	0	0	0
P1057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS	0	0	0	0	0
P1058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS	0	0	0	0	0



### TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

PCT MBR'S RESPONDING 'YES' BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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	SPC C5: C6: C7: C8: C9: C10: C11: C12: C13: C14: C15: C16: C17: C18: C19: C20: C21: C22: C23: C24: C25: C26: C27: C28: C29: C30: C31: C32: C33: C34: C35: C36: C37: C38: C39: C40: C41: C42: C43: C44: C45: C46: C47: C48: C49: C50: C51: C52: C53: C54: C55: C56: C57: C58: C59: C60: C61: C62: C63: C64: C65: C66: C67: C68: C69: C70: C71: C72: C73: C74: C75: C76: C77: C78: C79: C80: C81: C82: C83: C84: C85: C86: C87: C88: C89: C90: C91: C92: C93: C94: C95: C96: C97: C98: C99: C100: C101: C102: C103: C104: C105: C106: C107: C108: C109: C110: C111: C112: C113: C114: C115: C116: C117: C118: C119: C120: C121: C122: C123: C124: C125: C126: C127: C128: C129: C130: C131: C132: C133: C134: C135: C136: C137: C138: C139:
Q116 Q1=07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED	3 3 0 0 0 12 3 4 0
Q117 Q2=01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	0 0 0 0 28 4 17 0
Q118 Q2=02 DO YOU USE OR REFER TO DELAY LINES	4 5 0 0 12 4 17 0
Q119 Q2=03 DO YOU USE OR REFER TO MAGNETIC CORES	5 5 0 0 8 4 17 0
Q120 Q2=04 DO YOU USE OR REFER TO MAGNETIC DRUMS	6 5 0 0 12 4 17 0
Q121 Q2=05 DO YOU USE OR REFER TO MAGNETIC TAPES	6 5 0 0 12 4 17 0
Q122 Q2=06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS	6 6 0 0 16 4 13 0
Q123 Q2=07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	7 6 0 0 24 3 17 0
Q124 Q2=08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	4 4 0 0 8 4 4 0
Q125 Q2=09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	4 0 0 0 9 4 13 0
Q126 Q3=01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) CONVERTERS, OR BINARY-TO-DECIMAL READOUT CONVERTERS	12 12 6 0 40 7 26 20
Q127 Q3=02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES	6 5 6 0 20 3 13 20
Q128 Q3=03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE RESISTORS	4 3 6 0 4 3 9 20
Q129 Q3=04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	6 5 6 0 16 3 13 20
Q130 Q3=05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	3 3 0 0 12 3 4 0
Q131 Q3=06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	3 3 0 0 8 3 4 0
Q132 Q3=07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	3 3 0 0 12 3 4 0
Q133 Q3=08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	3 3 0 0 12 3 0 0
Q134 Q3=09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	4 4 0 0 12 3 13 0
Q135 Q3=10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	4 4 0 0 12 3 4 0
Q136 Q3=11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	4 4 0 0 12 3 4 0
Q137 Q3=12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	4 4 0 0 12 3 9 0
Q138 Q3=13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	5 5 0 0 16 3 9 0
Q139 Q3=14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	6 6 0 0 24 5 17 0

PCT MARS RESPONDING 'YES' BY SELECTED GROUPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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		SPC U31 U54	SPC U32 U54	SPC U33 U54	SPC U34 U54	SPC U35 U54	SPC U36 U54	SPC U37 U54
R1140	R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITY IN YOUR PRESENT JOB	0	1	0	0	4	1	0
R1141	R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	3	4	6	16	4	1	0
R1142	R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	2	2	6	12	0	1	4
R1143	R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	2	3	6	12	0	2	4
R1144	R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	33	32	39	53	20	29	48
R1145	R3-02 DO YOU FABRICATE COAXIAL CABLES	26	25	28	47	16	22	43
S1146	S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	33	34	28	59	24	32	46
S1147	S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	24	25	6	12	4	32	26
S1148	S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	6	6	0	6	4	8	9
S1149	S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	20	20	17	6	4	24	26
S1150	S2-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	43	42	61	88	76	22	78
S1151	S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	14	14	22	35	4	9	30
S1152	S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	14	14	22	35	8	10	22
S1153	S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	13	13	22	35	0	9	30
S1154	S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	13	13	22	29	8	10	22
S1155	S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	44	42	61	82	76	23	83
S1156	S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	28	27	49	47	44	13	65
S1157	S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	23	23	39	47	20	12	61
S1158	S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	29	28	44	41	40	16	65
T1159	T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	0	0	6	0	0	0	0
T1160	T1-02 DO YOU INSPECT INFRARED SYSTEMS	0	0	0	0	0	0	0
T1161	T1-03 DO YOU CLEAN INFRARED SYSTEMS	0	0	0	0	0	0	0
T1162	T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	0	0	0	0	0	0	0
T1163	T1-05 DO YOU OPERATE INFRARED SYSTEMS	0	0	0	0	0	0	0
T1164	T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	0	0	0	0	0	0	0
T1165	T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0	0	0	0	0
T1166	T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	0	0	0	0	0	0	0
T1167	T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0	0	0	0	0
T1168	T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	0	0	0	0	0	0	0



PCT MBR'S RESPONDING • YES • BY SELECTED GRPS  
 TASK GROUP SUMMARY  
 PERCENT MEMBERS PERFORMING

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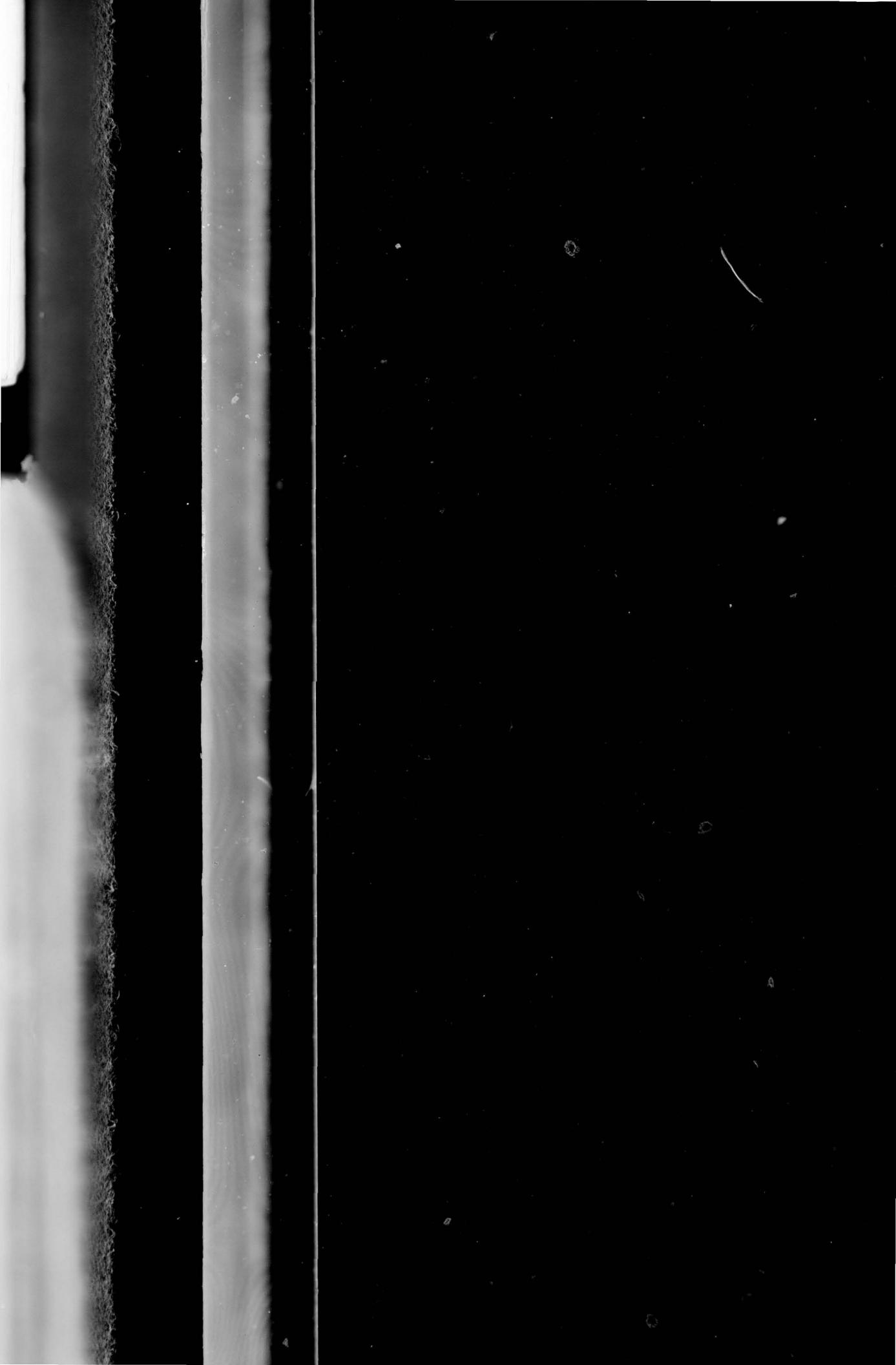
	U4-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	SPC 058
T1210 T2-25 DO YOU WORK WITH HALF SILVERED (1928 REFLECTIVE) MIRRORS		0	0	0	0	0	0	0	0
T1211 T2-26 DO YOU WORK WITH HELICAL FLASHTUBES		0	0	0	0	0	0	0	0
T1212 T2-27 DO YOU WORK WITH RUBY		0	0	0	0	0	0	0	0
T1213 T2-28 DO YOU WORK WITH HELIUM-NEON		0	0	0	0	0	0	0	0
T1214 T2-29 DO YOU WORK WITH HELIUM-XENON		0	0	0	0	0	0	0	0
T1215 T2-30 DO YOU WORK WITH XENON		0	0	0	0	0	0	0	0
T1216 T2-31 DO YOU WORK WITH CESIUM-HELlUM		0	0	0	0	0	0	0	0
T1217 T2-32 DO YOU WORK WITH ARGON		0	0	0	0	0	0	0	0
T1218 T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS		0	0	0	0	0	0	0	0
T1219 T2-34 DO YOU WORK WITH GALLIUM ARSENIDE		0	0	0	0	0	0	0	0
T1220 T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE STORAGE TUBES (MMSST)		12	11	28	71	0	2	30	60
T1221 T3-02 DO YOU INSPECT DVST OR MMSST		11	11	28	71	0	2	30	40
T1222 T3-03 DO YOU CLEAN DVST OR MMSST		7	6	22	47	0	1	17	40
T1223 T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMSST		8	6	22	53	0	0	26	40
T1224 T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMSST		11	11	22	71	0	2	30	40
T1225 T3-06 DO YOU TROUBLESHOOT DVST OR MMSST		9	9	22	47	0	2	30	40
T1226 T3-07 DO YOU REMOVE OR REPLACE DVST OR MMSST TUBES FROM MAJOR ASSEMBLIES OR UNITS		8	6	17	41	0	2	22	40
T1227 T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST		3	2	17	12	0	0	13	40
T1228 T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMSST		2	2	6	24	0	0	0	0
T1229 T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS		2	1	11	6	0	0	4	40
T1230 T3-11 DO YOU PERFORM TASKS ON WRITE GUNS		2	1	11	6	0	0	4	40
T1231 T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS		2	3	6	24	0	0	4	0
T1232 T3-13 DO YOU PERFORM TASKS ON ERASE GUNS		2	2	6	12	0	0	9	20
T1233 T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS		2	2	11	12	0	0	4	40
U1234 U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING		6	6	0	0	20	3	17	0
TASKS		6	6	0	0	20	3	17	0
U1235 U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS		6	6	0	0	20	3	17	0
U1236 U1-03 DO YOU USE OR REFER TO PROGRAMS		6	6	0	0	20	3	17	0
U1237 U1-04 DO YOU USE OR REFER TO HEXIDEIMAL SYSTEMS		9	9	0	0	12	3	9	0
U1238 U1-05 DO YOU USE OR REFER TO B-4-2-1 SYSTEMS		2	3	0	0	4	3	0	0
U1239 U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS		2	2	0	0	0	0	0	0
U1240 U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS		6	6	0	0	20	3	17	0
U1241 U1-08 DO YOU USE OR REFER TO TIME-SHARING		4	4	0	0	4	3	13	0
U1242 U1-09 DO YOU USE OR REFER TO DATA WORDS		5	5	0	0	16	3	13	0
U1243 U1-10 DO YOU USE OR REFER TO ADDRESS WORDS		5	5	0	0	16	3	13	0
U1244 U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS		5	5	0	0	16	3	13	0
U1245 U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION		4	4	0	0	8	3	9	0
U1246 U1-13 DO YOU USE OR REFER TO INFORMATION WORDS		5	5	0	0	16	3	13	0
U1247 U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING		5	5	0	0	8	3	17	0
U1248 U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING		4	4	0	0	8	3	9	0

**TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING**

DT-TSK

	SPC 051	SPC 052	SPC 054	SPC 055	SPC 056	SPC 057	SPC 058
U1249	U1-16	DO YOU PERFORM TASKS ON INPUT DEVICES					
U1250	U1-17	DO YOU PERFORM TASKS ON STORAGE DEVICES					
U1251	U1-18	DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS					
U1252	U1-19	DO YOU PERFORM TASKS ON CONTROL SECTIONS					
U1253	U1-20	DO YOU PERFORM TASKS ON OUTPUT DEVICES					
U1254	U1-21	DO YOU PERFORM TASKS ON POWER SUPPLIES					
U1255	U2-01	DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION	7	8	6	12	4
U1256	U2-02	DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	2	2	6	0	0
U1257	U2-03	DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	2	2	6	0	2
U1258	U2-04	DUMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED NO TASKS	0	0	0	0	0

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ANALOG FLIGHT SIMULATOR SPECIALIST, AFSC 34153.(U)  
AUG 77 T J O'CONNOR, J B KEETH

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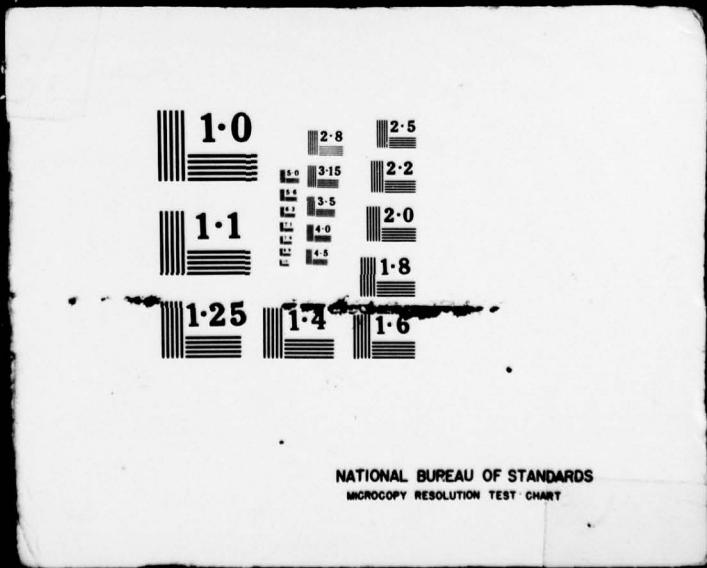
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)	<p>This report summarized the results of the administration of the Electronic Principles Inventory to airmen assigned as Analog Flight Simulator Specialists (AFSC 34153). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.</p> <p style="text-align: right;">2 Zawer</p>	

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→ This specialty has the following functions:

Installs, maintains, repairs, inspects, operates and modifies analog flight simulators, motion systems, and associated electronic equipment. Performs preventive maintenance on analog flight simulators. Installs, repairs, adjusts, and modifies analog flight simulators. Operates analog flight simulators and simulator equipment. Supervises analog flight simulator personnel.

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